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SPACE OPERATIONS CONTROL CENTER

SATELLITE SITUATION REPORT

VOL. 5 NO. 4

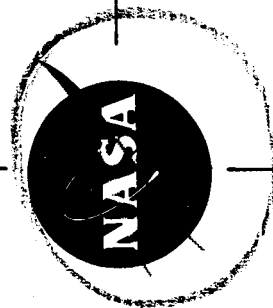
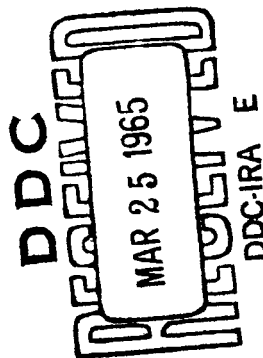
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FEBRUARY 28, 1965



GODDARD SPACE FLIGHT CENTER

GREENBELT, MD.

SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 5 NO. 4

FEBRUARY 28, 1965

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED BY
THE GODDARD SPACE FLIGHT CENTER, NORAD, AND SMITHSONIAN ASTROPHICAL
OBSERVATORY AS OF 1200Z ON FEBRUARY 28, 1965.

NOTE:

Orbital Elements used in the Satellite Situation Report have been changed. The NORAD Period has been replaced by the Anomalistic Period, which is measured from perigee to perigee.

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ., (MC/S)
					MINUTES				
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.3	33.20	1578	340	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.24	4310	659	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.23	3939	649	
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.85	3279	562	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.89	3649	564	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.34	3716	512	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.33	1068	557	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.31	1051	552	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.40	743	688	
BETA 2	TIROS 1	029	US	1 APR	99.2	48.40	742	697	
BETA 3	NONE	101	US	1 APR	97.9	48.50	703	610	
BETA 4	NONE	115	US	1 APR	99.9	48.16	806	699	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.8	51.22	571	346	
GAMMA 4	NONE	099	US	13 APR	96.7	51.25	727	476	
EPSILON 3	NONE	036	USSR	15 MAY	90.7	64.97	354	254	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.03	487	478	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.71	1051	620	
ETA 2	GREB	046	US	22 JUN	101.6	66.71	1053	616	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.68	1033	617	
ETA 4		840	US	22 JUN	101.5	66.69	1047	617	
ETA 5		841	US	22 JUN	101.5	66.69	1047	614	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1960 LAUNCHES (CONT'D)									
IOTA 1	ECHO 1	049	US	12 AUG	114.0	47.22	1623	1193	
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.24	1687	1500	
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.25	1682	1521	
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED				
IOTA 5	METAL OBJECT	053	US	12 AUG	118.4	47.29	1687	1533	
NU 1	COURIER 1B	058	US	4 OCT	107.0	28.32	1212	963	
NU 2	ROCKET BODY	059	US	4 OCT	106.0	28.23	1208	923	
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.93	2246	417	
XI 2	ROCKET BODY	062	US	3 NOV	111.8	49.94	2203	418	
XI 3	NONE	069	US	3 NOV	109.0	49.38	1960	400	
XI 4	NONE	105	US	3 NOV	110.4	50.48	2069	420	
PI 1	TIROS 2	063	US	23 NOV	98.2	48.52	727	621	
PI 2	ROCKET BODY	064	US	23 NOV	98.1	48.51	724	611	
PI 3	NONE	074	US	23 NOV	98.2	48.54	724	616	
PI 4	NONE	075	US	23 NOV	98.3	48.51	731	623	
1961 LAUNCHES									
ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.39	546	465	
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.40	540	463	
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT				
DELTA 2	ROCKET BODY	082	US	16 FEB	118.5	38.85	2599	628	
DELTA 3	NONE	085	US	16 FEB	CURRENT ELEMENTS NOT MAINTAINED				
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION UNCERTAIN				
NU 1	EXPLORER 11	107	US	27 APR	107.9	28.77	1767	492	
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.82	993	886	\$54\$324\$150\$400
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.82	996	885	
OMICRON 3-206**	METAL OBJECTS		US	29 JUN					
RHO 1	TIROS 3	162	US	12 JUL	100.4	47.90	813	741	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1961 LAUNCHES (CONT'D)									
RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.89	808	740	
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.92	791	615	
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.85	934	772	
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.17	3570	3321	
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.2	91.17	2049	2049	
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.22	3583	3341	
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED				
A DELTA 1	MIDAS 4	192	US	21 OCT	166.0	95.86	3745	3508	
A DELTA 3	METAL OBJECT	194	US	21 OCT	165.6	95.81	3733	3489	
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.84	3793	3494	
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.43	1106	953	
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.43	1103	958	
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.41	1100	946	
1962 LAUNCHES									
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT				
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT				
BETA 1	TIROS 4	226	US	8 FEB	100.4	48.31	843	708	
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.12	938	706	
BETA 3	ROCKET BODY	228	US	8 FEB	99.5	48.43	759	706	
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.30	846	698	
ZETA 1	ORB.SOL. OBS.1	255	US	7 MAR	96.0	32.84	586	548	
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.83	585	547	
KAPPA 1		271	US	9 APR	153.0	86.62	3341	2856	
KAPPA 3		273	US	9 APR	152.6	86.67	3365	2801	
KAPPA 4		274	US	9 APR	153.3	86.67	3423	2802	
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT				
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.5	58.88	1165	397	
OMICRON 2	ROCKET BODY	288	US	26 APR	100.3	58.87	1158	391	

OBJECT	CODE NAME	CATALOGUE NUMBER	OBJECTS IN ORBIT			PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
			SOURCE	LAUNCH						
1962 LAUNCHES (CONT'D)										
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.13	963	599		
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.13	958	596		
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.20	1079	603		
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	57.99	852	579		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.78	5645	943		
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.72	5623	952		
A OMICRON 1		369	US	23 AUG	99.5	98.70	858	617		
A OMICRON 2		370	US	23 AUG	98.2	98.65	738	613		
A OMICRON 3		378	US	23 AUG	100.8	98.73	974	621		
A OMICRON 4		388	US	23 AUG	99.5	98.70	857	616		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.33	709	687		
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.33	703	687		
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.43	776	682		
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.20	689	640		
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.48	1033	1002		\$136.591\$136.077
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.49	1028	1002		
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.53	1025	1000		
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.44	1036	1000		
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2	ROCKET BODY	440	US	18 OCT	HELIOCENTRIC ORBIT					
B KAPPA 1		444	US	27 OCT	128.9	71.36	3944	205		
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	312.1	18.04	17402	307		
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS					
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.14	1182	1077		\$162\$324

<u>OBJECTS IN ORBIT</u>									
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLINATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1962 LAUNCHES (CONT'D)									
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.17	1161	1072	
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT				
B TAU 1		502	US	13 DEC	107.6	70.36	1999	232	
B TAU 2	INJUN 3	504	US	13 DEC	111.6	70.36	2361	236	
B TAU 4		508	US	13 DEC	102.5	70.35	1525	224	
B TAU 5		513	US	13 DEC	107.5	70.32	1987	231	
B TAU 6		520	US	13 DEC	110.7	70.39	2289	230	
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.51	7440	1318	
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.8	47.53	7422	1318	
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.02	1177	753	
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.65	732	700	
B PSI 2		514	US	19 DEC	97.7	90.77	728	569	
B PSI 3		519	US	19 DEC	99.1	90.64	735	695	
B PSI 4		523	US	19 DEC	100.2	90.49	845	693	
									\$136.140;136.620
1963 LAUNCHES									
1963 03A		527	US	16 JAN	94.4	81.89	524	461	
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 04B	ROCKET BODY	532	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED				
1963 05A		533	US	19 FEB	97.7	100.47	798	500	
1963 05B		534	US	19 FEB	97.7	100.48	798	501	
1963 05C		535	US	19 FEB	96.8	100.47	742	476	
1963 05D		536	US	19 FEB	98.3	100.47	835	525	
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT				
1963 09A	EXPLORER 17	564	US	3 APR	94.4	57.60	727	246	
1963 13A	TELSTAR 2	573	US	7 MAY	225.3	42.74	10817	955	
									136.050

OBJECT	CODE NAME	CATALOGUE NUMBER	OBJECTS IN ORBIT				PERIOD MINUTES	INCLI- NATION	APOGEE		PERIGEE		TRANSMITTING FREQ. (MC/S)
			SOURCE	LAUNCH					Km.	Km.			
1963 LAUNCHES (CONT'D)													
1963 13B	ROCKET BODY	575	US	7 MAY	225.1	42.87	10804	952					
1963 14A		574	US	9 MAY	166.4	87.29	3692	3599					
1963 14B		579	US	9 MAY	166.4	87.00	4198	3095					
1963 14C		608	US	9 MAY	166.4	87.35	3663	3628					
1963 14D		589	US	9 MAY	CURRENT ELEMENTS NOT MAINTAINED								
1963 14E		602	US	9 MAY	166.1	87.36	3644	3618					
1963 14F		628	US	9 MAY	166.8	87.36	3681	3641					
1963 14G		629	US	9 MAY	166.4	87.35	3675	3615					
1963 14H		702	US	9 MAY	166.4	87.35	3658	3632					
1963 17A		580	USSR	22 MAY	91.1	48.95	415	233					
1963 17C		582	USSR	22 MAY	92.2	49.16	454	304					
1963 22A		594	US	16 JUN	99.7	90.01	758	733					\$150\$400
1963 22B		603	US	16 JUN	99.7	90.02	759	731					
1963 22C		610	US	16 JUN	101.2	90.22	892	742					
1963 22D		611	US	16 JUN	98.1	89.84	775	565					
1963 24A	TIROS 7	604	US	19 JUN	97.4	58.24	652	620					\$136.233\$136.922
1963 24B	ROCKET BODY	605	US	19 JUN	97.3	58.24	649	615					
1963 24C	METAL OBJECT	606	US	19 JUN	97.9	58.37	683	631					
1963 24D	METAL OBJECT	607	US	19 JUN	96.9	58.08	645	574					
1963 25B	RESEARCH SATELLITE FOR GEOPHYSICS	614	US	27 JUN	132.2	82.12	4104	339					
1963 26A		612	US	28 JUN	102.0	49.76	1301	409					
1963 27A		613	US	29 JUN	94.7	82.32	524	483					
1963 30A		622	US	19 JUL	167.8	88.40	3730	3675					
1963 30B		635	US	19 JUL	167.8	88.36	3716	3673					
1963 30C		630	US	19 JUL	167.5	88.43	3718	3658					
1963 30D		624	US	19 JUL	167.8	88.29	4291	3108					
1963 30E		631	US	19 JUL	168.3	88.43	3778	3661					

<u>OBJECTS IN ORBIT</u>									
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHES (CONT'D)									
1963 31A	SYNCOM 2	634	US	26 JUL	1438.6	32.16	35866	35805	\$136.467\$136.980 \$1814.069 \$1815.794 \$1820.177
1963 31B	ROCKET BODY	625	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED				
1963 38A		669	US	28 SEP	107.1	89.90	1117	1070	
1963 38B		670	US	28 SEP	107.4	89.91	1134	1078	
1963 38C		671	US	28 SEP	107.3	89.91	1134	1076	
1963 38D		672	US	28 SEP	107.3	89.93	1122	1187	
1963 38E		745	US	28 SEP	107.1	89.94	1117	1068	
1963 39A		674	US	17 OCT	6480.6	38.02	116331	101199	
1963 39B		675	US	17 OCT	2319.4	35.90	102371	953	
1963 39C		692	US	17 OCT	6511.5	36.88	115480	102781	136.652\$162\$324
1963 42B		682	US	29 OCT	91.0	89.97	381	268	
1963 43A	POLYOT 1	683	USSR	1 NOV	102.3	58.93	1392	344	
1963 43B		684	USSR	1 NOV	100.3	58.63	1207	336	
1963 43C		685	USSR	1 NOV	96.6	58.96	885	303	
1963 43D		686	USSR	1 NOV	99.8	59.81	1158	333	
1963 46A	EXPLORER 18 CENTAUR 2	693	US	27 NOV	5603.8	37.72	192558	3698	136.111
1963 47A		694	US	27 NOV	107.8	30.37	1767	481	
1963 47B		696	US	27 NOV	107.2	30.07	1615	580	
1963 47C		697	US	27 NOV	107.5	30.07	1640	576	
1963 47D		698	US	27 NOV	108.0	29.92	1659	609	
1963 47E		699	US	27 NOV	108.6	30.08	1711	612	
1963 47F		700	US	27 NOV	108.7	30.47	1756	569	
1963 47G		701	US	27 NOV	107.8	30.00	1640	609	
1963 47H		739	US	27 NOV	105.9	30.42	1584	486	
1963 49A		703	US	5 DEC	106.8	89.96	1095	1064	
1963 49B		704	US	5 DEC	107.1	89.97	1123	1067	\$150\$400

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHES (CONT'D)									
1963 49C		705	US	5 DEC	107.1	89.96	1121	1067	
1963 49D		706	US	5 DEC	107.1	89.96	1124	1059	
1963 49E		715	US	5 DEC	107.1	89.95	1131	1056	
1963 49F		753	US	5 DEC	107.1	89.96	1127	1062	
1963 53A	EXPLORER 19	714	US	19 DEC	115.4	78.65	2321	628	
1963 53B		721	US	19 DEC	115.9	78.59	2398	592	
1963 53C		722	US	19 DEC	115.8	78.58	2386	600	
1963 53D		723	US	19 DEC	115.9	78.60	2394	600	
1963 53E		724	US	19 DEC	115.9	78.63	2389	609	
1963 53F		725	US	19 DEC	115.8	78.61	2381	603	
1963 53G		726	US	19 DEC	115.8	78.59	2387	597	
1963 53H		732	US	19 DEC	115.8	78.60	2386	598	
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.52	747	709	\$136.231
1963 54B		717	US	21 DEC	99.3	58.51	740	710	\$136.923
1963 54C		720	US	21 DEC	101.1	58.48	919	700	
1963 54D		736	US	21 DEC	97.7	58.49	714	581	
1964 LAUNCHES									
1964 01A		727	US	11 JAN	103.4	69.93	936	910	
1964 01B	GCSE	728	US	11 JAN	103.4	69.91	936	910	
1964 01C	EGRS	729	US	11 JAN	103.4	69.91	934	911	136.803
1964 01D	SOLAR RAD.	730	US	11 JAN	103.5	69.92	935	910	136.886
1964 01E		731	US	11 JAN	103.5	69.92	936	910	
1964 02A		733	US	19 JAN	101.3	99.08	846	795	
1964 02B		734	US	19 JAN	101.3	99.08	827	813	
1964 02C		735	US	19 JAN	101.3	99.09	830	814	
1964 03A	RELAY 2	737	US	21 JAN	194.7	46.31	7412	2088	136.620
									\$136.142

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 03B		738	US	21 JAN	194.8	46.37	7430	2075	
1964 04A	ECHO 2	740	US	25 JAN	108.5	81.52	1299	1014	136.021;136.170
1964 04B		741	US	25 JAN	108.9	81.52	1307	1048	
1964 04C		742	US	25 JAN	108.8	81.49	1306	1042	
1964 04D		743	US	25 JAN	108.8	81.55	1310	1038	
1964 04E		749	US	25 JAN	97.4	81.57	968	291	
1964 05A	SATURN 5	744	US	25 JAN	93.3	31.44	614	255	
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.88	7114	404	
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.3	58.99	67459	962	
1964 06C		750	USSR	30 JAN	168.1	60.88	7019	400	
1964 06D		751	USSR	30 JAN	1384.0	59.18	68524	1000	
1964 11A		759	US	28 FEB	94.6	82.07	510	491	
1964 11B		760	US	28 FEB	93.5	82.04	454	442	
1964 11C		761	US	28 FEB	93.7	82.07	462	450	
1964 15A	ARIEL 2	771	US/UK	27 MAR	100.5	51.70	1274	283	136.557
1964 15B		775	US	27 MAR	100.0	51.64	1229	287	
1964 15C		847	US	27 MAR	103.8	51.37	1503	370	
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT				
1964 19B	POLYOT 2	784	USSR	12 APR	91.9	58.05	433	299	
1964 26A		801	US	4 JUN	103.1	90.49	954	856	\$150\$400
1964 26B		805	US	4 JUN	103.9	90.19	981	905	
1964 26C		806	US	4 JUN	102.3	90.83	953	785	
1964 26D		809	US	4 JUN	103.1	90.50	955	856	
1964 30A		811	US	13 JUN	90.8	114.99	324	301	
1964 31A		812	US	18 JUN	101.6	99.77	841	828	
1964 31B		813	US	18 JUN	101.6	99.79	839	831	
1964 31C		815	US	18 JUN	101.6	99.80	842	826	
1964 35A		824	US	2 JUL	94.9	82.09	530	496	

OBJECT	CODE NAME	CATALOGUE NUMBER	OBJECTS IN ORBIT				APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
			SOURCE	LAUNCH	PERIOD MINUTES	INCLI - NATION			
1964 LAUNCHES (CONT'D)									
1964 38A	ELECTRON 3	829	USSR	10 JUL	168.1	60.82	7032	395	
1964 38B	ELECTRON 4	830	USSR	10 JUL	1313.8	59.81	66059	657	
1964 38C		831	USSR	10 JUL	168.5	60.82	7061	396	
1964 38D		832	USSR	10 JUL	1341.3	59.93	67168	652	
1964 40A		836	US	17 JUL	6091.6	38.94	104302	102173	
1964 40B		837	US	17 JUL	6000.9	40.75	112358	93662	
1964 40C		838	US	17 JUL	2349.9	38.30	104014	319	136.771
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 45B	SYNCOM 3	851	US	14 AUG	127.0	95.68	3703	279	\$136.470\$136.980
1964 47A		858	US	19 AUG	1436.8	.10	35807	35791	\$1820.177\$1815.794
									\$1814.931
1964 47B		862	US	19 AUG	694.5	16.80	38084	1113	
1964 48A		861	US	21 AUG	90.2	114.97	280	280	
1964 49D	COSMOS 41	869	USSR	22 AUG	714.8	65.46	39575	634	
1964 49E		898	USSR	22 AUG	716.3	65.35	39843	442	
1964 50A	COSMOS 42	864	USSR	22 AUG	96.3	48.96	923	226	
1964 50B		866	USSR	22 AUG	95.2	48.96	821	220	
1964 50C	COSMOS 43	867	USSR	22 AUG	96.2	48.96	916	227	
1964 51A	EXPLORER 20	870	US	25 AUG	103.9	79.91	1018	872	\$136.326;\$136.350
									\$136.680
1964 51B		871	US	25 AUG	103.9	79.91	1014	870	
1964 51C		873	US	25 AUG	103.6	79.85	990	870	
1964 51D		874	US	25 AUG	103.6	79.84	1027	833	
1964 51E		875	US	25 AUG	103.6	79.83	1037	822	
1964 52A	NIMBUS 1	872	US	28 AUG	98.3	98.67	934	428	136.499
1964 52B		878	US	28 AUG	98.4	98.67	932	430	

<u>OBJECTS IN ORBIT</u>									
<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 53A	COSMOS 44	876	USSR	28 AUG	99.5	65.07	870	602	
1964 53B		877	USSR	28 AUG	99.6	65.10	801	677	
1964 54A	OGO 1	879	US	5 SEP	3842.5	37.39	147492	2278	\$136.200\$400.250 \$400.850 136.146
1964 60A	EXPLORER 21	889	US	4 OCT	2080.3	33.72	9288	917	
1964 63A		893	US	6 OCT	106.3	89.92	1085	1030	
1964 63B		897	US	6 OCT	106.6	89.94	1082	1058	
1964 63C		900	US	6 OCT	106.6	89.93	1088	1051	
1964 63D		901	US	6 OCT	106.6	89.92	1088	1055	
1964 63E		902	US	6 OCT	106.6	89.93	1088	1054	
1964 63F		903	US	6 OCT	106.6	89.93	1089	1055	
1964 64A	EXPLORER 22	899	US	10 OCT	104.8	79.71	1079	890	\$136.171\$162\$324 \$20\$40\$41\$360
1964 64B		907	US	10 OCT	104.7	79.71	1077	891	
1964 64C		976	US	10 OCT	104.1	79.34	1062	842	
1964 64D		977	US	10 OCT	105.5	80.06	1119	919	
1964 69A	COSMOS 49	913	USSR	24 OCT	91.4	48.94	424	255	
1964 72A		922	US	4 NOV	95.0	82.05	523	513	
1964 72B		925	US	4 NOV	94.9	82.04	521	508	
1964 72C		926	US	4 NOV	94.8	82.06	511	506	
1964 72D		927	US	4 NOV	94.8	82.03	513	507	
1964 73A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT				
1964 74A	EXPLORER 23	924	US	6 NOV	99.2	51.94	979	463	\$136.080\$136.857
1964 76A	EXPLORER 24	931	US	21 NOV	116.0	81.40	2480	523	136.711
1964 76B	EXPLORER 25	932	US	21 NOV	116.2	81.39	2495	529	136.293\$136.860
1964 76C		933	US	21 NOV	116.2	81.38	2495	532	
1964 76D		934	US	21 NOV	116.3	81.36	2496	537	
1964 76E		935	US	21 NOV	116.3	81.41	2493	540	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 76F		936	US	21 NOV	116.1	81.27	2464	548	
1964 76G		937	US	21 NOV	116.4	81.38	2498	542	
1964 76H		939	US	21 NOV	115.7	81.30	2433	541	
1964 76I		940	US	21 NOV	116.1	81.26	2494	523	
1964 76J		941	US	21 NOV	116.1	81.41	2477	535	
1964 76K		960	US	21 NOV	116.4	81.36	2500	540	
1964 77A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT				
1964 77B		942	US	28 NOV	HELIOCENTRIC ORBIT				
1964 78C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT				
1964 80A	COSMOS 51	947	USSR	9 DEC	92.3	48.75	511	257	
1964 80B		948	USSR	9 DEC	91.8	48.76	468	250	
1964 83A		953	US	13 DEC	106.0	90.00	1072	1013	
1964 83B		956	US	13 DEC	106.3	90.00	1094	1019	
1964 83C		959	US	13 DEC	106.3	90.00	1089	1025	136.561\$162\$234
1964 83D		965	US	13 DEC	106.3	89.99	1086	1028	\$150\$400
1964 83E		966	US	13 DEC	106.3	89.98	1086	1028	
1964 83F		967	US	13 DEC	106.3	90.00	1097	1016	
1964 84A	SAN MARCO	957	ITALY	15 DEC	93.9	37.78	727	196	\$20;136.738 \$136.536 136.275
1964 86A	EXPLORER 26	963	US	21 DEC	456.3	20.14	26199	310	
1965 LAUNCHES									
1965 03A		973	US	19 JAN	97.6	98.76	832	463	
1965 03B		974	US	19 JAN	97.2	98.81	781	460	
1965 03C		975	US	19 JAN	97.3	98.68	791	472	
1965 04A	TIROS 9	978	US	22 JAN	119.2	96.41	2582	707	\$136.231\$136.920
1965 04B		979	US	22 JAN	119.3	96.43	2593	707	
1965 06A	COSMOS 53	983	USSR	30 JAN	98.5	48.73	1150	221	

OBJECTS IN ORBIT									
OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
1965 LAUNCHES (CONT'D)									
1965 06B		984	USSR	30 JAN	98.3	48.72	1128	224	
1965 06C		985	USSR	30 JAN	95.1	48.71	195	195	
1965 06D		986	USSR	30 JAN	95.4	48.71	180	180	
1965 07A	ORB.SOL.OBS. 2	987	US	3 FEB	96.4	32.86	627	547	136.712
1965 07B		988	US	3 FEB	96.6	32.86	640	544	
1965 08A		1000	US	11 FEB	145.6	32.12	2798	2780	
1965 08B		1001	US	11 FEB	145.4	32.15	2788	2768	
1965 08C		1002	US	11 FEB	145.7	32.15	2808	2777	
1965 09A	PEGASUS 1	1085	US	16 FEB	97.6	31.73	731	497	\$136.410;136.890
1965 09B		1088	US	16 FEB	97.1	31.76	731	498	
1965 11A		1089	USSR	21 FEB	106.3	56.06	1839	269	
1965 11B	COSMOS 54	1090	USSR	21 FEB	105.3	56.02	1752	261	
1965 11C	COSMOS 55	1091	USSR	21 FEB	104.6	56.04	1687	259	
1965 11D	COSMOS 56	1092	USSR	21 FEB	105.0	56.05	1730	256	
1965 11E		1094	USSR	21 FEB	104.4	56.04	1666	256	
1965 12B		1095	USSR	22 FEB	90.7	64.50	441	141	
1965 12C		1100	USSR	22 FEB	90.4	64.77	362	158	
1965 12F		1103	USSR	22 FEB	88.3	64.60	212	169	
1965 12G		1104	USSR	22 FEB	90.8	64.79	462	154	
1965 12J		1106	USSR	22 FEB	88.5	64.74	221	171	
1965 12L		1108	USSR	22 FEB	88.9	64.70	248	178	
1965 12P		1111	USSR	22 FEB	89.2	64.95	292	159	
1965 12Q		1112	USSR	22 FEB	88.1	64.60	248	111	
1965 12S		1114	USSR	22 FEB	88.2	64.67	243	107	
1965 12U		1116	USSR	22 FEB	89.3	64.73	276	143	
1965 12V		1117	USSR	22 FEB	89.1	64.78	293	160	
1965 12W		1118	USSR	22 FEB	88.6	64.95	261	149	
1965 12X		1119	USSR	22 FEB	88.7	64.73	289	133	
1965 12Y		1120	USSR	22 FEB	89.7	64.74	297	200	
1965 12Z		1121	USSR	22 FEB	88.5	65.20	222	187	

OBJECT	CODE NAME	OBJECTS IN ORBIT				PERIOD MINUTES	INCL- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)
		CATALOGUE NUMBER	SOURCE	LAUNCH						
1965 LAUNCHES (CONT'D)										
1965 12AA		1122	USSR	22 FEB	89.0	64.68	338	118		
1965 12AC		1124	USSR	22 FEB	89.4	65.00	324	158		
1965 12AD		1125	USSR	22 FEB	88.1	65.14	216	148		
1965 12AE		1126	USSR	22 FEB	87.8	65.00	340	118		
1965 12AG		1128	USSR	22 FEB	90.0	64.88	354	164		
1965 12AH		1129	USSR	22 FEB	89.9	64.75	358	149		
1965 12AJ		1130	USSR	22 FEB	90.3	64.78	394	160		
1965 12AK		1131	USSR	22 FEB	90.8	64.65	416	158		
1965 12AL		1132	USSR	22 FEB	90.9	64.57	496	107		
1965 12AM		1133	USSR	22 FEB	91.1	64.68	486	157		
1965 12AN		1134	USSR	22 FEB	91.5	64.77	518	156		
1965 12AP		1135	USSR	22 FEB	90.4	64.72	384	174		
1965 12AQ		1136	USSR	22 FEB	90.8	64.79	436	169		
1965 12AR		1137	USSR	22 FEB	91.1	64.89	389	182		
1965 12AS		1138	USSR	22 FEB	90.7	64.78	425	166		
1965 12AT		1139	USSR	22 FEB	91.3	64.85	456	163		
1965 12AU		1140	USSR	22 FEB	90.3	64.70	390	182		
1965 12AV		1141	USSR	22 FEB	91.6	64.81	488	175		
1965 12AW		1142	USSR	22 FEB	90.8	64.75	436	143		
1965 12AX		1143	USSR	22 FEB	91.9	64.59	531	188		
1965 12AY		1144	USSR	22 FEB	91.2	64.67	478	162		
1965 12AZ		1145	USSR	22 FEB	90.7	64.67	434	169		
1965 12BA		1146	USSR	22 FEB	90.6	64.95	404	178		
1965 12BB		1147	USSR	22 FEB	91.4	64.67	496	170		
1965 12BC		1148	USSR	22 FEB	91.1	64.70	482	159		
1965 12BD		1149	USSR	22 FEB	91.2	64.79	475	169		
1965 12BE		1150	USSR	22 FEB	90.3	64.69	377	178		
1965 12BF		1151	USSR	22 FEB	90.4	64.81	385	181		

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 12BG		1152	USSR	22 FEB	91.1	64.75	420	214	
1965 12BH		1153	USSR	22 FEB	90.3	64.89	258	166	
1965 12BJ		1154	USSR	22 FEB	90.7	64.81	401	154	
1965 12BK		1155	USSR	22 FEB	90.2	64.84	359	154	
1965 12BL		1156	USSR	22 FEB	91.9	64.78	513	181	
1965 12BM		1157	USSR	22 FEB	90.6	64.60	366	173	
1965 12BN		1158	USSR	22 FEB	89.2	64.85	259	259	
1965 12BP		1159	USSR	22 FEB	90.6	64.72	436	164	
1965 13A		1096	US	25 FEB	89.9	75.07	352	179	
1965 14A	COSMOS 58	1097	USSR	26 FEB	96.8	65.02	649	560	
1965 14B		1098	USSR	26 FEB	96.9	65.05	708	512	

* APHELION PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC.
 ** TWO HUNDRED AND FOUR METAL OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH
 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE
 FOUND IN THE DECAYED OBJECTS LIST.
 \$ TRANSMITTING ON COMMAND ONLY.
 & TRANSMITTING WHEN IN SUNLIGHT ONLY.
 # NO CATALOGUE NUMBER ASSIGNED.

DECAYED OBJECTS

PLEASE ADD THE FOLLOWING TO THE DECAYED OBJECTS LIST:

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>DATE</u>
1964 42A	COSMOS 36	844	USSR	30 JUL	28 FEB 65
1964 46D		856	USSR	18 AUG	19 FEB 65
1964 68B		914	US	23 OCT	23 FEB 65
1965 10A	RANGER 8	1086	US	17 FEB	20 FEB 65
1965 12A	COSMOS 57	1093	USSR	22 FEB	22 FEB 65
1965 12D		1101	USSR	22 FEB	25 FEB 65
1965 12E		1102	USSR	22 FEB	26 FEB 65
1965 12H		1105	USSR	22 FEB	25 FEB 65
1965 12K		1107	USSR	22 FEB	25 FEB 65
1965 12M		1109	USSR	22 FEB	26 FEB 65
1965 12N		1110	USSR	22 FEB	27 FEB 65
1965 12R		1113	USSR	22 FEB	25 FEB 65
1965 12T		1115	USSR	22 FEB	27 FEB 65
1965 12AB		1123	USSR	22 FEB	27 FEB 65
1965 12AF		1127	USSR	22 FEB	28 FEB 65